

INFORMATION DISCLOSURE CITATION
(Use several sheets if necessary)

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| Docket Number (Optional) 02-076 C1 | Application Number Unassigned |
| Applicant(s) Lucien Alfred Couvillon Jr. | |
| Filing Date Filed Herewith | Group Art Unit Unassigned |

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | REF | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|----------------------|-----|-----------------|----------|-----------------|-------|----------|-------------------------------|
| A.R. | 1 | 4,273,111 | 6/16/81 | Tsukaya | 128 | 6 | |
| | 2 | 4,286,585 | 9/1/81 | Ogawa | 128 | 6 | |
| | 3 | 4,499,895 | 2/29/85 | Takayama | 128 | 6 | |
| | 4 | 4,503,842 | 3/12/85 | Takayama | 128 | 4 | |
| | 5 | 4,543,090 | 9/24/85 | McCoy | 604 | 95 | |
| | 6 | 4,601,705 | 7/22/86 | McCoy | 604 | 95 | |
| | 7 | 4,753,223 | 6/28/88 | Bremer | 128 | 4 | |
| | 8 | 4,790,624 | 12/13/88 | Van Hoya et al. | 350 | 96.26 | |
| | 9 | 4,846,573 | 7/11/89 | Taylor et al. | 356 | 241 | |
| | 10 | 4,884,557 | 12/5/89 | Takehana et al. | 128 | 4 | |
| A.R. | 11 | 4,899,731 | 2/13/90 | Takayama et al. | 128 | 4 | |

FOREIGN PATENT DOCUMENTS

| | REF | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | Translation | |
|----|-----|-----------------|----------|---------|-------|----------|-------------|----|
| | | | | | | | YES | NO |
| AR | 1 | WO 01/58973 A2 | 8/16/01 | PCT | C08G | | ✓ | |
| | 2 | JP3004830 | 1/10/91 | Japan | A61B1 | 00 | ✓ | |
| | 3 | JP3170125 | 7/23/91 | Japan | A61B1 | 00 | ✓ | |
| | 4 | JP8066351 | 3/12/96 | Japan | A61B1 | 00 | ✓ | |
| AR | 5 | JP8322783 | 12/10/96 | Japan | A61B1 | 00 | ✓ | |

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

| | | |
|----|---|--|
| AR | 1 | Jae-Do Nam, "Electroactive Polymer (EAP) Actuators and Devices for Micro-Robot Systems" 28 November 2000. |
| AR | 2 | "Snake-like Robot Endoscopes", from http://robby.caltech.edu/~chen/res-medical.html , page updated 14 August 1996. |

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|-------------------------------|------------------------------------|
| EXAMINER <i>Arzon Band</i> | DATE CONSIDERED <i>8/9/2004</i> |
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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ATTY DOCKET NO.

02-076 C1

SERIAL NO.

Unassigned

Lucien Alfred Couvillon Jr.

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U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---------------------|----|-----------------|----------|------------------|-------|----------|-------------------------------|
| AR | 12 | 4,930,494 | 6/5/90 | Takehana et al. | 128 | 4 | |
| | 13 | 4,977,886 | 12/18/90 | Takehana et al. | 128 | 4 | |
| | 14 | 4,987,314 | 1/22/91 | Gotanda et al. | 250 | 551 | |
| | 15 | 5,188,111 | 2/23/93 | Yates et al. | 128 | 657 | |
| | 16 | 5,268,082 | 12/7/93 | Oguro et al. | 204 | 282 | |
| | 17 | 5,337,732 | 8/16/94 | Grundfest et al. | 128 | 4 | |
| | 18 | 5,396,879 | 3/14/95 | Wilk et al. | 128 | 4 | |
| | 19 | 5,431,645 | 7/11/95 | Smith et al. | 606 | 1 | |
| | 20 | 5,482,029 | 1/9/96 | Sekiguchi et al. | 600 | 109 | |
| | 21 | 5,492,131 | 2/20/96 | Galel | 128 | 772 | |
| AR | 22 | 5,556,370 | 9/17/96 | Maynard | 600 | 151 | |

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| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
|----|---|-----------------|----------|---------|-------|----------|-------------|----|
| | | | | | | | YES | NO |
| AR | 6 | JP10014863 | 1/20/98 | Japan | A61B1 | 00 | ✓ | |
| AR | 7 | ES 2 048 086 | 1/17/92 | Spain | H01B1 | 12 | | ✓ |
| AR | 8 | ES 2 062 930 | 12/28/92 | Spain | H01B1 | 12 | | ✓ |
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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| AR | 3 | Peirs et al., "Miniature Parallel Manipulators for Integration in a Self-propelling Endoscope," IUAP P4/24 IMechS Workshop, 27 October 1999. |
| AR | 4 | "Walking machines: 0-legged-robots," compiled by C. Duntgen, 26 August 2000. |

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Adrian B. B...

DATE CONSIDERED

8/9/2004

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U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---------------------|-----------------|-----------|----------|------------------|----------|-------------------------------|
| AR | 23 | 5,624,380 | 4/29/97 | Takayama et al. | 600 | 146 |
| | 24 | 5,631,040 | 5/20/97 | Takuchi et al. | 427 | 100 |
| | 25 | 5,645,520 | 7/8/97 | Nakamura et al. | 600 | 151 |
| | 26 | 5,662,587 | 9/2/97 | Grundfest et al. | 600 | 114 |
| | 27 | 5,855,565 | 1/5/99 | Bar-Cohen et al. | 604 | 104 |
| | 28 | 5,857,962 | 1/12/99 | Bracci et al. | 600 | 105 |
| | 29 | 5,873,817 | 2/23/99 | Kokish et al. | 600 | 143 |
| | 30 | 5,916,146 | 6/29/99 | Allota et al. | 600 | 141 |
| | 31 | 6,162,171 | 12/19/00 | Ng et al. | 600 | 141 |
| | 32 | 5,090,956 | 2/25/92 | McCoy | 604 | 95 |
| AR | 33 | 5,906,591 | 5/25/99 | Dario et al. | 604 | 95 |

FOREIGN PATENT DOCUMENTS

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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|----|---|--|
| AR | 5 | Yoseph Bar-Cohen, Ed., Electroactive Polymer (EAP) Actuators as Artificial Muscles, SPIE Press (2001), Chapter 1, pp. 3-44 |
| AR | 6 | Yoseph Bar-Cohen, Ed., Electroactive Polymer (EAP) Actuators as Artificial Muscles, SPIE Press (2001), Chapter 7, pp. 193-221. |

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|------------------------------|------------------------------------|
| EXAMINER <i>Amos Hoon</i> | DATE CONSIDERED <i>8/9/2004</i> |
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U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---------------------|----|-----------------|----------|-------------------|-------|----------|-------------------------------|
| AR | 34 | 6,249,076 B1 | 6/19/01 | Madden et al. | 310 | 363 | |
| | 35 | 5,250,167 | 10/5/93 | Adolf et al. | 204 | 299 | |
| | 36 | 5,389,222 | 2/14/95 | Shahinpoor | 204 | 299.2 | |
| | 37 | 5,556,700 | 9/17/96 | Kaneto et al. | 428 | 332 | |
| | 38 | 5,651,366 | 7/29/97 | Liang et al. | 128 | 662.06 | |
| | 39 | 5,771,902 | 6/30/98 | Lee et al. | 128 | 897 | |
| | 40 | 6,109,852 | 8/29/00 | Shahinpoor et al. | 414 | 1 | |
| | 41 | 5,535,759 | 7/16/96 | Wilk | 128 | 898 | |
| | 42 | 6,117,296 | 9/12/00 | Thomson | 204 | 607 | |
| | 43 | 5,368,015 | 11/29/94 | Wilk | 128 | 4 | |
| AR | 44 | 5,486,182 | 1/23/96 | Nakao et al. | 606 | 114 | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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| AR | 7 | Jeon et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 380-388. |
| AR | 8 | Cho et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 466-474. |

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8/9/2004

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Docket Number (Optional)

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Application Number

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Applicant(s)

Lucien Alfred Couvillon Jr.

Filing Date

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Group Art Unit

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Kubler et al., "Endoscopic Robots," Proceedings of 3rd International Conference on Medical Image Computing and Computer-Assisted Intervention - MICCAI 2000, pp. 949-955.

Worldwide ElectroActive Polymers (Artificial Muscles) Newsletter, Vol. 3, No. 1 (June 2001).

"Smart Catheters," from <http://www.piaggio.ccii.unipi.it/cathe.htm>, printed 8/27/01

"Snake-like Flexible Micro-robot," from http://www.agip.sciences.univ-metz.fr/~mihalach/Copernicus_project_engl.html, Project start: 1 May 1995.

"Robot Snake with Flexible Real-Time Control," from <http://ais.gmd.de/BAR/snake.html>, last updated 01-10-17.

Jager et al., "Microfabricating Conjugated Polymer Actuators," Science, Vol. 290 (24 November 2000), pp. 1540-1545.

Electroactive Polymer (EAP) Actuators as Artificial Muscles, Yoseph Bar-Cohen, Ed., SPIE Press (2001), Chapter 16, pp. 457-495.

Electroactive Polymer (EAP) Actuators as Artificial Muscles, Yoseph Bar-Cohen, Ed., SPIE Press (2001), Chapter 21, pp. 615-659.

Yoseph Bar Cohen, Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 1-6.

Madden et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 72-83.

Pelrine et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 335-349.

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Applicant(s)

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Filing Date

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Group Art Unit

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21

John David Wyndham Madden, "Conducting Polymer Actuators," Massachusetts Institute of Technology, September 2000.

22

"Viking Optima," from <http://www.guidant.com/products/optima.shtml>, 2002 Guidant Corporation

23

Active Endoscope (ELASTOR, Shape Memory Alloy Robot), <http://mozu.mes.titech.ac.jp/research/medical/endoscope/endoscope.html>, 9 pages including 3 Figures and 4 photographs.

24

Koji Ikuta et al., "Shape Memory Alloy Servo Actuator System With Electric Resistance Feedback And Application For Active Endoscope," IEEE Int'l Conference on Robotics and Automation (Apr 24-29, 1988), pp. 427-430.

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David L. Brock, "Review of Artificial Muscle based on Contractile Polymers," MIT Artificial Intelligence Laboratory, A.I. Memo No. 1330, November 1991, pages 1-12.

EXAMINER

DATE CONSIDERED

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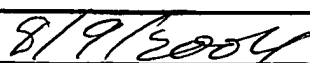
| INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) | | | | Docket Number (Optional) 02-076 C1 | | Application Number Unassigned | | | |
|---|-----|-----------------|------------|---|------------------------------------|---|------------------------------|-------------------------------|--|
| | | | | Applicant(s) Lucien Alfred Couvillon, Jr. | | | | | |
| | | | | Filing Date Filed Herewith | | | | Group Art Unit 3739 | |
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| U.S. PATENT DOCUMENTS | | | | | | | | | |
| EXAMINER INITIAL | REF | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILED DATE IF APPROPRIATE | | |
| <i>AR</i> | 1. | 6,514,237 B1 | 2/4/2003 | Maseda | 604 | 533 | | | |
| | 2. | 6,468,203 B2 | 10/22/2002 | Belson | 600 | 146 | | | |
| | | | | | | | | | |
| <i>AR</i> | 3. | 6,071,234 | 6/6/2000 | Takada | 600 | 114 | | | |
| | 4. | 5,239,982 | 8/31/93 | Trauthen | 128 | 4 | | | |
| | 5. | 5,347,987 | 9/20/94 | Feldstein et al. | 128 | 4 | | | |
| | 6. | 5,957,833 | 9/28/99 | Shan | 600 | 117 | | | |
| | 7. | 6,428,470 | 8/6/02 | Thompson | 600 | 173 | | | |
| <i>AR</i> | 8. | 6,547,723 | 4/15/03 | Ouchi | 600 | 146 | | | |
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| FOREIGN PATENT DOCUMENTS | | | | | | | | | |
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| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | | | | | | | |
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| EXAMINER <i>Adrian Boone</i> | | | | | DATE CONSIDERED <i>8/9/2004</i> | | | | |
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Please type a plus sign (+) inside this box. FORM PTO/SB/08

| Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">Complete If Known</th> </tr> <tr> <td style="width: 50%;">Application Number</td> <td>10751,544</td> </tr> <tr> <td>Filing Date</td> <td>01/05/2004</td> </tr> <tr> <td>First Named Inventor</td> <td>Lucien Alfred Courvillon, Jr.</td> </tr> <tr> <td>Group Art Unit</td> <td>3739</td> </tr> <tr> <td>Examiner Name</td> <td>Unassigned</td> </tr> <tr> <td>Attorney Docket Number</td> <td>02-276 C1</td> </tr> </table> | | Complete If Known | | Application Number | 10751,544 | Filing Date | 01/05/2004 | First Named Inventor | Lucien Alfred Courvillon, Jr. | Group Art Unit | 3739 | Examiner Name | Unassigned | Attorney Docket Number | 02-276 C1 |
|---|-------------------------------|--|---|-------------------|--|--------------------|-----------|-------------|------------|----------------------|-------------------------------|----------------|------|---------------|------------|------------------------|-----------|
| Complete If Known | | | | | | | | | | | | | | | | | |
| Application Number | 10751,544 | | | | | | | | | | | | | | | | |
| Filing Date | 01/05/2004 | | | | | | | | | | | | | | | | |
| First Named Inventor | Lucien Alfred Courvillon, Jr. | | | | | | | | | | | | | | | | |
| Group Art Unit | 3739 | | | | | | | | | | | | | | | | |
| Examiner Name | Unassigned | | | | | | | | | | | | | | | | |
| Attorney Docket Number | 02-276 C1 | | | | | | | | | | | | | | | | |
| Sheet | 2 | of | 2 | | | | | | | | | | | | | | |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | | |
|---|---------------|---|--|
| Examiner Initials* | Cite No. 1 | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | |
| AR | 1 | A. DELLA SANTA et al., "Intravascular Microcatheters Steered by Conducting Polymer Actuators," 18 th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Amsterdam 1996, pp. 2203-2204. | |
| AR | 2. | ALBERTO MAZZOLDI et al., "Conductive Polymer Based Structures for a Steerable Catheter," <i>Smart Structures and Materials 2000: Electroactive Polymer Actuators and Devices</i> , Y. Bar-Cohen, ed., Proceedings of SPIE, Vol. 3987 (2000), pp. 273-280. | |
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